

CLAIMS:

1. A two dimensional scanning device, for use in a projecting display, comprising a surface (43; 53) suspended by at least two torsion elements (49; 55) defining a torsion axis (B), and a first actuator (45, 46, 47; 60, 61) for pivoting said surface (43; 53) around said torsion axis (B), characterized by
 - 5 - a cantilever beam (41; 51) having one end fixed in relation to said surface and an opposite end arranged to bend around a bending axis (A) non-parallel to said torsion axis (B),
 - a reflective surface (31; 34) provided on said cantilever beam (41; 51), and
 - a second actuator (48; 58) for bringing said cantilever beam to oscillate at its
 - 10 resonance frequency.
2. A scanning device according to claim 1, wherein said cantilever beam (41; 51) has such mass and such dimensions that its resonance frequency is in the range of 10 kHz – 100 kHz, and preferably in the range 15kHz – 35kHz.
- 15 3. A scanning device according to claim 1, wherein said cantilever beam (41; 51) has such dimensions that it is bendable around the bending axis (A) in a range of at least 15 degrees, and preferably more than 50 degrees.
- 20 4. A scanning device according to claim 1, wherein said cantilever beam has two legs (30a, 30b; 33a, 33b), each being fixed in relation to the surface (43; 53), and wherein said reflective surface (31; 34) extends to unite the two legs (30a, 30b; 33a, 33b).
5. A scanning device according to claim 1, wherein said cantilever beam (51) and said surface (53) are formed from one substrate, said cantilever beam (51) extending from one side of an opening in said surface (53).
- 25 6. A scanning device according to claim 1, wherein said surface (53) and said torsion bars (55) are formed by etching a substrate of silicon or silicon nitride.

7. A scanning device according to claim 1, wherein said second actuator is a piezo-electric actuator (48).
- 5 8. A scanning device according to claim 1, wherein said first actuator is a galvanic actuator, comprising an electromagnet.
9. A scanning device according to claim 1 - 5, wherein said first actuating means comprises two electrically conducting coils.
- 10 10. A projecting device (1), including a scanning device (13) according to claim 1.
11. A projecting device according to claim 10, further comprising:
- means (4a, 4b, 5, 6) for generating a plurality of laser beams (3a, 3b, 3c),
 - 15 - a driver (8) for modulating said laser beams, and
 - means (10a, 10b, 10c, 11, 12) for collimating and combining said beams, and directing the combined beam (2) onto said scanner (13).